What is claimed is:

1. A process for producing and winding partially oriented polyester multifilament yarns not less than 85% by weight based on the total weight of the multifilament yarn polybutylene terephthalate (PBT) and/or polytrimethylene terephthalate (PTMT) that contain between 0.05% by weight and 2.5% by weight based on the total weight of the multifilament yarn of at least one additive polymer extensibility enhancer, which comprises providing a wound yarn package which is stable in long-term storage and insensitive to elevated temperatures during storage and transportation by heat-treating the wound polyester multifilament yarn package at a temperature in the range from > 45°C to 65°C.

2. A process as claimed in claim 1, wherein the wound yarn package is heat treated using heated rolls or rollers.

3. A process as claimed in claim 1 or 2, wherein the wound yarn package is heat treated using radiant heat.

4. A process as claimed in at least one of the preceding claims, wherein the wound yarn package is heat treated using heated gases.

5. A process as claimed in at least one of the preceding claims, wherein the wound yarn package is heat treated within a housing which surrounds the tube holding the wound yarn package.

6. A process as claimed in claim 5, wherein a gas is passed into the housing through an inlet.

7. A process as claimed in claim 6, wherein the gas is removed from the housing through an outlet.

8. A process as claimed in claim 7, wherein the gas is circulated in a circulation system which includes the inlet and the outlet.

9. A process as claimed in claim 7 and/or 8, wherein, viewed in the direction of movement of the yarn, the gas is fed behind the tube and removed before the tube.

10. A process as claimed in claim 6, wherein the gas is heated outside the housing.

11. A process as claimed in claim 10, wherein the temperature within the housing is measured and the temperature of the gas is conformed by suitable heating such that the temperature within the housing is in the range from > 45°C to 65°C.

12. A process as claimed in any preceding claim, wherein the yarn package is wound such that it has a cheeselike shape.

13. A process as claimed in at least one of the preceding claims, wherein at least one polyester multifilament yarn is heat treated at a temperature in the range from 50°C to 150°C before the winding.

14. A process as claimed in claim 13, wherein at least one polyester multifilament yarn is heat treated using heatable godets.

15. A process as claimed in claim 13 and/or 14, wherein at least one polyester multifilament yarn is heat treated using heated gases.

16. A process as claimed in at least one of claims 13 to 15, wherein at least one polyester multifilament yarn is heat treated using radiant heat.

17. A process as claimed in at least one of the preceding claims, which comprises

a) setting the spindlewind extension ratio in the range from 70 to 500,
b) passing the filaments directly upon exit from the spinneret through a quench delay zone 30 mm to 200 mm in length,
c) quenching the filaments to below the solidification temperature,
d) converging the filaments at a distance between 500 mm and 2500 mm from the underface of the spinneret,
e) setting the yarn tension before and between the takeoff godets between 0.05 cN/dtex to 0.20 cN/dtex,
f) taking the yarn up at a yarn tension between 0.025 cN/dtex to 0.15 cN/dtex.

18. A process as claimed in at least one of the preceding claims, wherein the takeup speed is set between 2200 m/min and 6000 m/min.

19. A process as claimed in at least one of the preceding claims, wherein PBT and/or PTMT having a limiting viscosity number in the range from 0.7 dl/g to 0.95 dl/g are used.

20. Partially oriented polyester multifilament yarns obtainable by a process as claimed in at least one of the preceding claims, characterized by
a) a breaking extension between 75% and 145%,
b) a boiloff shrinkage in the range from 0 to 10%,
c) a normal Uster below 1.1%,

d) a breaking load coefficient of variation ≤ 4.5% and

e) a breaking extent coefficient of variation ≤ 4.5%

after 4 weeks of storage under standard conditions as defined in German standard DIN 53802.

21. A process for producing bulky yarns, wherein multifilament yarns as claimed in claim 20 are processed in a draw-texturing machine at a speed of at least 500 m/min.

22. Bulky polyester SET filaments obtainable by a process as claimed in claim 21, characterized in that their breaking strength is more than 20 cN/tex and the breaking extension more 32%.

23. Bulky polyester HE filaments obtainable by a process as claimed in claim 21, characterized in that their breaking strength is more than 20 cN/text and the breaking extension more than 30%.